

109TH CONGRESS
1ST SESSION

H. R. 4435

To provide for the establishment of the Advanced Research Projects Agency-Energy.

IN THE HOUSE OF REPRESENTATIVES

DECEMBER 6, 2005

Mr. GORDON (for himself, Ms. PELOSI, Mr. HONDA, Mr. EMANUEL, Mr. INSLEE, Mr. LIPINSKI, Ms. ZOE LOFGREN of California, Mr. BAIRD, Mr. MENENDEZ, Mr. GEORGE MILLER of California, Mr. PRICE of North Carolina, Mr. MILLER of North Carolina, Mr. TIERNEY, Mr. COSTA, Mr. CARNAHAN, Ms. ESHOO, Mr. SMITH of Washington, and Mr. UDALL of Colorado) introduced the following bill; which was referred to the Committee on Science

A BILL

To provide for the establishment of the Advanced Research Projects Agency-Energy.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. FINDINGS.**

4 The Congress finds the following:

5 (1) The United States faces a range of energy
6 challenges that affect our economy, security, and en-
7 vironment. Fundamentally, these challenges involve
8 science and technology.

1 (2) The Department of Energy already has
2 some of the mechanisms necessary to promote long-
3 term research, but it lacks the mechanisms for
4 quickly transforming the results into technology that
5 meets national needs.

6 (3) A recent report of the Secretary of Energy's
7 Advisory Board's Task Force on the Future of
8 Science Programs at the Department of Energy con-
9 cluded that "America can meet its energy needs only
10 if we make a strong and sustained investment in re-
11 search in physical science, engineering, and applica-
12 ble life sciences and if we translate advancing sci-
13 entific knowledge into practice".

14 (4) The Department of Defense, since 1958,
15 has used its Defense Advanced Projects Research
16 Agency (DARPA) for aggressively addressing real-
17 time defense problems through targeted programs of
18 research and technology development that have im-
19 proved our national defense through transformation
20 technologies.

21 (5) The National Academy of Sciences' report
22 entitled "Rising Above the Gathering Storm: Ener-
23 gizing and Employing America for a Brighter Eco-
24 nomic Future" recommends creating a new agency
25 within the Department of Energy to sponsor "cre-

1 ative, out-of-the-box, transformational, generic en-
2 ergy research in those areas where industry by itself
3 cannot or will not undertake such sponsorship,
4 where risks and pay-offs are high”. Such an organi-
5 zation would be able to accelerate the process by
6 which research is transformed to address energy-re-
7 lated economic, environmental, and security issues to
8 decrease dependence on foreign energy through tar-
9 geted research and technology development.

10 **SEC. 2. ADVANCED RESEARCH PROJECTS AGENCY-ENERGY.**

11 (a) ESTABLISHMENT.—There is established the Ad-
12 vanced Research Projects Agency-Energy (in this Act re-
13 ferred to as “ARPA-E”) within the Department of En-
14 ergy.

15 (b) GOAL.—The goal of ARPA-E is to reduce the
16 amount of energy the United States imports from foreign
17 sources by 20 percent over the next 10 years by—

18 (1) promoting revolutionary changes in the crit-
19 ical technologies that would promote energy inde-
20 pendence;

21 (2) turning cutting-edge science and engineer-
22 ing into technologies for energy and environmental
23 application; and

24 (3) accelerating innovation in energy and the
25 environment for both traditional and alternative en-

1 energy sources and in energy efficiency mechanisms to
2 decrease the Nation's reliance on foreign energy
3 sources.

4 (c) DIRECTOR.—ARPA-E shall be headed by a Di-
5 rector who shall be appointed by the Secretary of Energy.
6 The Director shall report to the Secretary.

7 (d) RESPONSIBILITIES.—The Director shall admin-
8 ister the Fund established under section 3 to award com-
9 petitive grants, cooperative agreements, or contracts to in-
10 stitutions of higher education, companies, or consortia of
11 such entities which may include federally funded research
12 and development centers, to achieve the goals stated in
13 subsection (b) through targeted acceleration of—

- 14 (1) energy-related research;
15 (2) development of resultant techniques, proc-
16 esses, and technologies, and related testing and eval-
17 uation; and
18 (3) demonstration and commercial application
19 of the most promising technologies and research ap-
20 plications.

21 (e) PERSONNEL.—

22 (1) PROGRAM MANAGERS.—The Director shall
23 designate employees to serve as program managers
24 for each of the programs established pursuant to the
25 responsibilities established for ARPA-E under sub-

1 section (d). Program managers shall be responsible
2 for—

3 (A) establishing research and development
4 goals for the program, including through the
5 convening of workshops and conferring with
6 outside experts, as well as publicizing its goals
7 to the public and private sectors;

8 (B) soliciting applications for specific areas
9 of particular promise, especially those which the
10 private sector cannot or will not provide fund-
11 ing;

12 (C) selecting research projects for support
13 under the program from among application sub-
14 mitted to ARPA-E, following consideration
15 of—

16 (i) the novelty and scientific and tech-
17 nical merit of the proposed projects;

18 (ii) the demonstrated capabilities of
19 the applicants to successfully carry out the
20 proposed research project; and

21 (iii) such other criteria as are estab-
22 lished by the Director; and

23 (D) monitoring the progress of projects
24 supported under the program.

1 (2) HIRING AND MANAGEMENT.—In hiring per-
2 sonnel for ARPA–E, the Secretary shall have the
3 hiring and management authorities described in sec-
4 tion 1101 of the Strom Thurmond National Defense
5 Authorization Act for Fiscal Year 1999 (5 U.S.C.
6 3104 note). For purposes of subsection (c)(1) of
7 that section, the term of appointments for employees
8 may not exceed 5 years before the granting of any
9 extension.

10 (f) COORDINATION.—The Director shall ensure that
11 the activities of ARPA–E are coordinated with those of
12 other relevant research agencies, and may carry out
13 projects jointly with other agencies.

14 **SEC. 3. FUND.**

15 (a) ESTABLISHMENT.—There is established in the
16 Treasury the Energy Independence Acceleration Fund (in
17 this Act referred to as the “Fund”), which shall be admin-
18 istered by the Director of ARPA–E for the purposes of
19 carrying out this Act.

20 (b) AUTHORIZATION OF APPROPRIATIONS.—There
21 are authorized to be appropriated to the Director of
22 ARPA–E for deposit in the Fund \$300,000,000 for fiscal
23 year 2007, \$375,000,000 for fiscal year 2008,
24 \$468,000,000 for fiscal year 2009, \$585,000,000 for fis-
25 cal year 2010, \$732,000,000 for fiscal year 2011, and

1 \$915,000,000 for fiscal year 2012, to remain available
2 until expended.

3 **SEC. 4. RECOUPMENT.**

4 (a) REQUIREMENT.—Not later than 180 days after
5 the date of enactment of this Act, the Secretary shall es-
6 tablish procedures and criteria for the recoupment of the
7 Federal share of each project supported under this Act.
8 Such recoupment shall occur within a reasonable period
9 of time following the date of the completion of such
10 project, but not later than 20 years following such date,
11 taking into account the effect of recoupment on—

12 (1) the commercial competitiveness of the entity
13 carrying out the project;

14 (2) the profitability of the project; and

15 (3) the commercial viability of the technology
16 utilized.

17 (b) WAIVER.—The Secretary may at any time waive
18 or defer all or some portion of the recoupment requirement
19 as necessary for the commercial viability of the project.

20 (c) AVAILABILITY OF FUNDS.—Revenue received by
21 the Federal Government pursuant to this section shall be
22 deposited into the Fund and shall be available with further
23 appropriation to fund future grants, contracts, and coop-
24 erative agreement as authorized by the Director.

1 (d) DEFINITIONS.—For the purposes of this sec-
2 tion—

3 (1) the term “for-profit entity” means a li-
4 censee or successor in interest to a venture member,
5 or any other for-profit person or entity, or combina-
6 tion of such persons or entities, that earns or ac-
7 crues amounts subject to this section;

8 (2) the term “product or invention supported
9 by or produced as a result of funding under this
10 Act” includes any product or invention of a venture
11 member based on or using any technology or inven-
12 tion arising out of a venture funded under this Act;
13 and

14 (3) the term “revenue generated by or resulting
15 from a product or invention” includes revenue de-
16 rived from the sale or licensing of patents or other
17 rights with respect to the product or invention.

18 **SEC. 5. ADVICE.**

19 (a) ADVISORY COMMITTEES.—The Director may seek
20 advice on any aspect of ARPA-E from—

21 (1) existing Department of Energy advisory
22 committees; and

23 (2) new advisory committees organized to sup-
24 port the programs of ARPA-E and to provide advice
25 and assistance on—

1 (A) specific program tasks; or

2 (B) overall direction of ARPA-E.

3 (b) APPLICABILITY.—Section 14 of the Federal Advi-
4 sory Committee Act shall not apply to advisory committees
5 organized under subsection (a)(2).

6 (c) ADDITIONAL SOURCES OF ADVICE.—The Direc-
7 tor may seek advice and review from the National Acad-
8 emy of Sciences, the National Academy for Engineering,
9 and any other professional or scientific organization with
10 expertise in specific processes or technologies under devel-
11 opment by ARPA-E.

12 **SEC. 6. ARPA-E EVALUATION.**

13 After ARPA-E has been in operation for 54 months,
14 the President's Committee on Science and Technology
15 shall begin an evaluation (to be completed within 12
16 months) of how well ARPA-E is achieving its goals and
17 mission. The evaluation shall include the recommendation
18 of such Committee on whether ARPA-E should be contin-
19 ued or terminated, as well as lessons-learned from its oper-
20 ation. The evaluation shall be made available to Congress
21 and to the public upon completion.

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